

***User's Handbook
for the Wang SC Series
Mini Power Conditioners***

WANG

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WANG**SOURCE INSPECTION
TEST DATA SHEET****SC Series Mini Power Conditioner**

OPER NUMBER	TEST SEQUENCE OPERATION	APPLIED LOAD	INPUT VOLTAGE VAC (true rms)	OUTPUT VOLTAGE VAC (true rms)	SPECIFIED LIMITS
1	TURN ON VOLTAGE	NOLOAD	72.0	N.A.	Vin < 90 Vac
2	MINIMUM LINE	20%	90 Vac	117.0	Vout ≥ 109.2 Vac
3	MAX OUTPUT TAP 1	20%	INCREASING	125.2	Vout ≤ 126 Vac
4	MAX OUTPUT TAP 2	20%	INCREASING	125.3	Vout ≤ 126 Vac
5	MAX OUTPUT TAP 3	20%	INCREASING	125.2	Vout ≤ 126 Vac
6	MAX INPUT TAP 4	20%	136.0	126 Vac	Vin ≥ 132 Vac
7	OVERVOLTAGE SHUTOFF	20%	INCREASING	134.1	Vout 134.5±1.5 Vac
8	MAXIMUM INPUT	100%	139.4	126 Vac	Vin ≥ 132 Vac
9	MIN OUTPUT TAP 4	100%	DECREASING	110.3	Vout ≥ 109.2 Vac
10	MIN OUTPUT TAP 3	100%	DECREASING	110.4	Vout ≥ 109.2 Vac
11	MIN OUTPUT TAP 2	100%	DECREASING	110.3	Vout ≥ 109.2 Vac
12	MIN INPUT TAP 1	100%	87.9	109.2 Vac	Vin ≤ 90 Vac
13	UNDERVOLTAGE SHUTOFF	100%	60.4	N.A.	Vin ≤ 65 Vac

✓	MODEL NUMBER
	SC-50
	SC-100
✓	SC-100-A
	SC-200

PRODUCT ACCEPTANCE

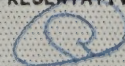
WANG SERIAL NUMBER

39201 Q

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WANG REPRESENTATIVE



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I. Introduction

1.1 About the Wang SC Series...

Thank you for choosing the Wang SC Series Mini Power Conditioner to protect your critical equipment. The Wang SC Conditioners will insure that voltage fluctuations and power line noise will not damage your valuable hardware, software, or data files.

What does the Wang SC do?

These units feature an enhanced tap-switching design that maintains +5% to -9% output voltage regulation with inputs ranging from -25% to +15% of nominal. (See Table 1 to determine the nominal voltage for each model.) In addition, the Wang SCs provide noise filtering to eliminate both types of power line noise — common- and transverse-mode — within the ranges noted in the Electrical Specifications.

How does it work?

To achieve dynamic voltage regulation along with noise rejection, the system combines electronic tap switching with an isolated/ shielded transformer. The Control Regulator circuit board at the heart of the Wang SC Conditioner selectively activates the switching between transformer taps to alter the turns ratio from the primary to secondary windings. (See Figure 1.) Effectively, this action raises or lowers the output voltage to maintain the specified tolerances.

When an overvoltage or undervoltage condition in the output necessitates a change from one tap to the next, the switch occurs at that point in the cycle when the current is zero. Not only does this assure that only one tap is on at a time, it also reduces stress on switching elements.

In addition to regulating voltage, the Wang SC Series uses passive techniques to isolate and shield its transformer. This allows for rejection of common-mode noise of 140 dB between 10 Hz and 1MHz — the range where virtually all noise transients occur. This filtering also provides for attenuation of transverse-mode noise to more than 60 dB at 100 KHz. Together, these voltage regulation and noise attenuation characteristics will eliminate the effects of more than 90% of all problem-causing disturbances.

Further, low output impedance enables this equipment to provide switching power supplies, such as those used in most critical loads, with harmonic frequency currents beyond the normal line frequency. The Wang SC Series is especially designed to meet these peak-current requirements while maintaining effective noise rejection. This design also results in minimal distortion on the output line.

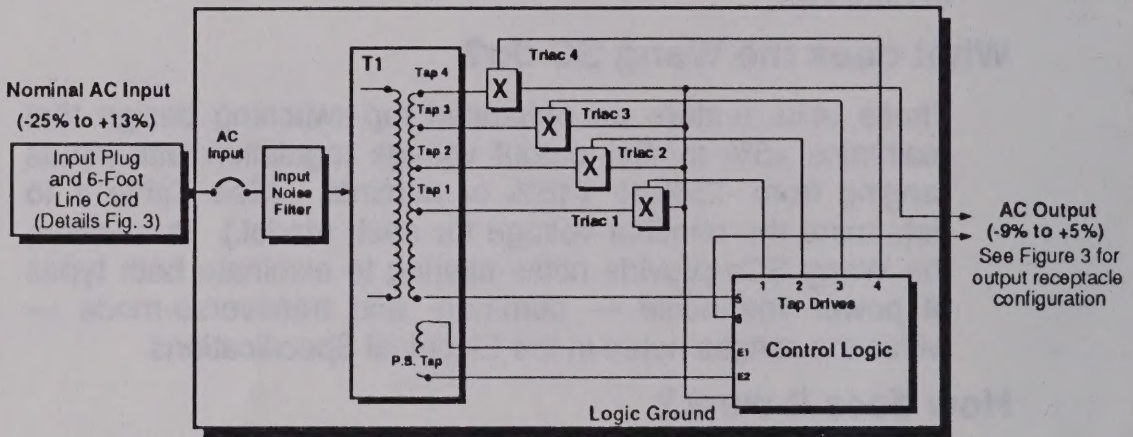


Figure 1. Wang SC Series System Block Diagram

1.2 What the Wang SC Power Conditioner will do for you...

Why is it used?

As our dependence on computers and other high technology products increases, we grow more and more dependent on the AC power needed to run them. However, raw utility power often isn't enough to meet the sophisticated needs of the new, faster, and more powerful electronic circuitry. And in many cases, raw utility power suffers further degradation within one's own facility. An ever-increasing number of applications require "clean" and highly regulated power to achieve the performance for which the equipment was designed. The Wang SC Series provides this power.

1.3 About this handbook...

What this handbook covers...

In this brief guide to the Wang SC Series, you'll find everything you need to know about installing, caring for, and using the unit. The handbook also provides system specifications and a simple troubleshooting guide.

Where to find what the handbook does not cover...

Because the Wang SC Conditioner is a simple, maintenance-free product Wang does not recommend user-maintenance beyond that discussed in Section III. Therefore, this handbook does not cover details regarding the technical aspects of operation and maintenance. If you have a question that is not answered here, please contact your Wang Customer Service Department for more information.

1.4 Equipment Specifications

Input

Voltage:	Nominal (See Table 1) -25% to +13%
Frequency:	60 Hz or 50 Hz, ± 3 Hz
Low Input Shutdown:	Approximately 50% of nominal

Output

Nominal Voltage:	See Table 1
Frequency:	Same as input
Regulation:	-9% to +5%
Distortion:	Reduces input line distortion by 1%
Power Factor:	0.7 leading or lagging
Efficiency:	94% typical
Response Time:	1 cycle
Overvoltage Protection:	Output voltage will be interrupted if it exceeds rated maximum by 12%. Fusible interrupt (crowbar) at 15%
Overload Rating:	200% for 10 seconds, 300% for 1 second with 50% duty cycle, 1000% for 1 cycle

Equipment Specifications, continued

Isolation

Common-Mode Noise Rejection:	140 dB at 10 Hz to 1MHz
Transverse-Mode Noise Rejection:	60 dB minimum at 100 KHz
Input-to-Output Isolation:	Full magnetic isolation

Physical

Input/Output Connections:	Line cord with appropriately rated plug and receptacle
Audible Noise:	Less than 48 dB at 1 meter, ANSI "A" scale
Operating Temperature:	0°C to 40°C (32°F to 104°F)
Storage Temperature:	-25°C to 70°C (-13°F to 158°F)
Operating Humidity:	0 to 95%, relative non- condensing
Operating Altitude:	Up to 10,000 feet (3,048 meters)
Dimensions (See Figure 2)	
Height:	7.75 inches (19.6 cm)
Width:	13.0 inches (33.0 cm)
Depth:	10.4 inches (26.4 cm)

TABLE 1. Electrical Specifications

Model Number	Power Rating (VA)	Frequency (Hz)	Input/Output (VAC)	Output (Amps)	Fuse (MDA -Type)
SC-50 ¹	500	60	120	4.2	6A
SC-100 ¹	1000	60	120	8.3	12A
SC-100-A ²	1000	60	120	8.3	12A
SC-200 ³	2000	60	120	16.6	CB
SC-50-1 ⁴	500	50/60	220	2.3	4A
SC-100-1 ⁴	1000	50/60	220	4.5	7A
SC-200-1 ⁴	2000	50/60	220	9.1	15A

NOTES: 1. NEMA 5-15 plug and NEMA 5-15 quad receptacle. 2. NEMA 5-15 plug and NEMA L5-20 receptacle. 3. NEMA L5-30 plug and NEMA 5-15 quad receptacle plus NEMA L5-20 receptacle. 4. Western European plug and receptacle; or UK plug and receptacle on "-1" models.

Equipment Specifications, continued

Weights:

SC-50	32 lbs. (14.6 kg.)
SC-100	41 lbs. (18.7 kg.)
SC-100-A	41 lbs. (18.7 kg.)
SC-200	64 lbs. (29.2 kg.)
SC-50-1	35 lbs. (16.0 kg.)
SC-100-1	47 lbs. (21.4 kg.)
SC-200-1	76 lbs. (34.7 kg.)

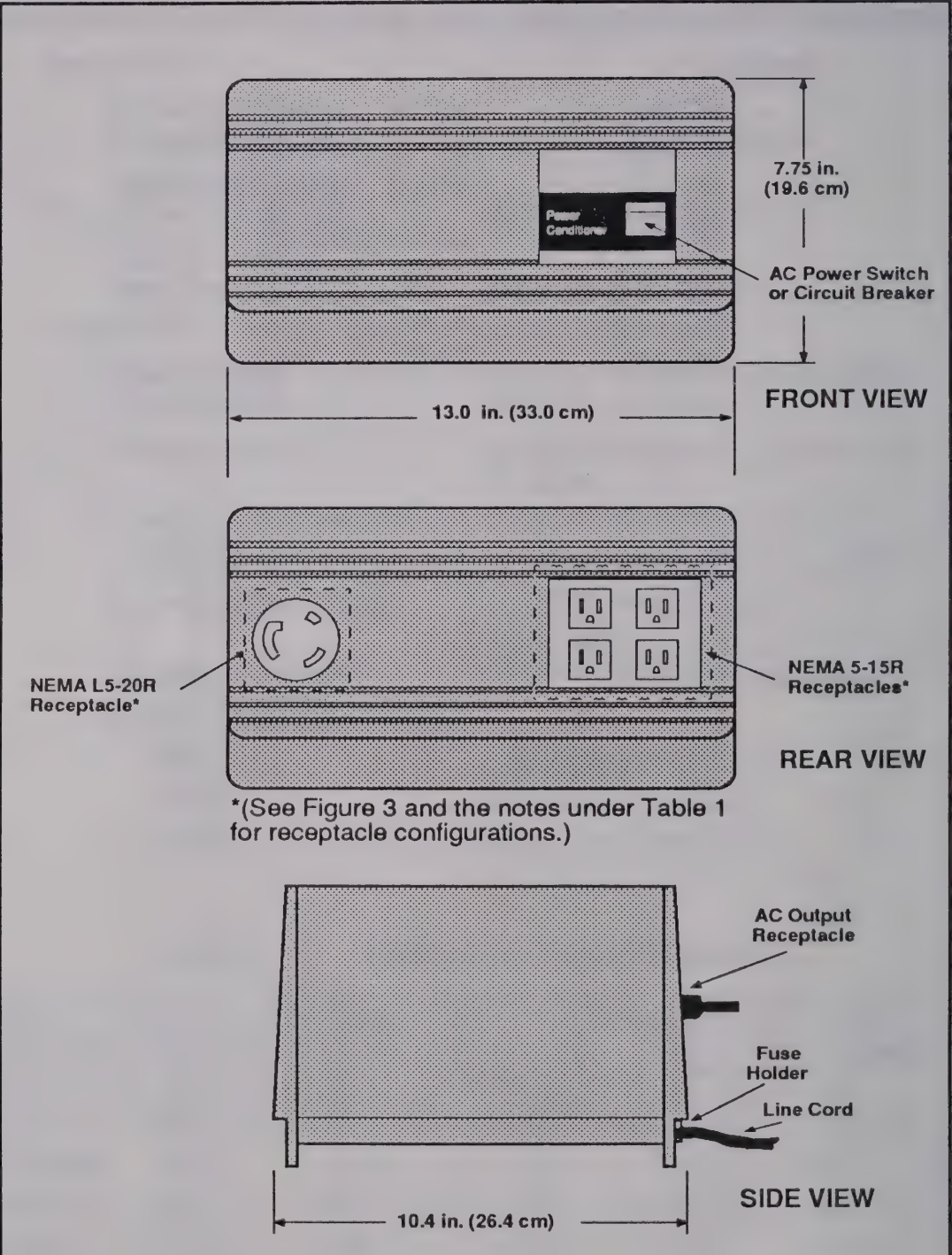


Figure 2. Wang SC Series Dimensions

II. Setting Up Your Power Conditioner

2.1 Start-Up

Location

When planning the location of your Wang SC power conditioning unit, consider the following factors:

- Clearance for ventilation
- Avoidance of temperature and humidity extremes
- Protection from the elements (especially moisture)
- Ease of access
- Placement in relation to the computer or other critical load
- Distance from the nearest grounded receptacle

Precautions

Your Wang SC Conditioner comes with a six-foot line cord and grounded plug. For safe and proper operation, the unit **must** be plugged into a grounded receptacle.

Input and Output Connections

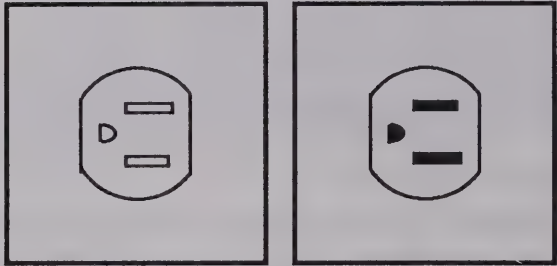
Each model comes standard with a line cord, an appropriately rated plug, and an output receptacle.

2.2 Using the Wang SC Power Conditioner

To put your Wang SC Conditioner to work, all you need to do is plug it into the nearest grounded receptacle, plug your load into the Wang SC's outlet(s), and turn on the power switch (or circuit breaker). Your equipment is now protected from over 90% of all power line disturbances — just about anything short of a complete power failure.

When you shut down your equipment for a short time, there's no need to turn off the Wang SC's power switch. However, if you won't be using the equipment for an extended period, be sure to turn the switch off.

For Model Number SC-50

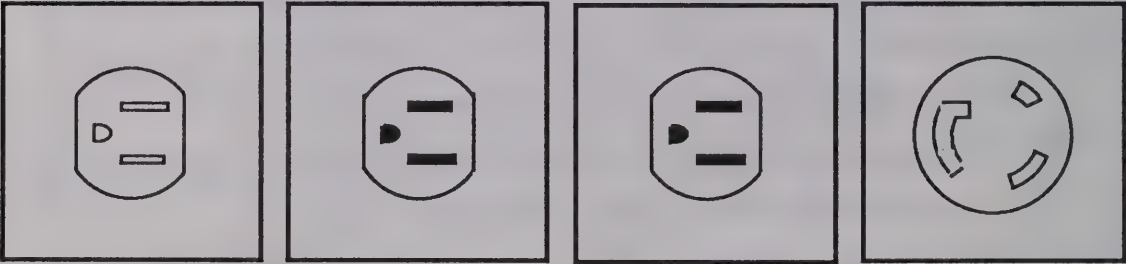


NEMA 5-15R

NEMA 5-15P

For Model Number SC-100

For Model Number SC-100-A



NEMA 5-15R

NEMA 5-15P

NEMA 5-15P

NEMA L5-20R

For Model Number SC-200



NEMA 5-15R

NEMA L5-30P

NEMA L5-20R

**Figure 3. Plug and Receptacle Configurations
for Wang SC Series Power Conditioners**

III. Caring for Your Power Conditioner

3.1 Basic Care

In a reasonably clean, dry environment, the Wang SC Power Conditioner will continue operating for many years to come. Because it's so quiet and compact, you'll probably forget that it's there as long as it's not exposed to excessive dirt or moisture.

3.2 Troubleshooting

Should it appear that your load is not receiving power from the Wang SC Conditioner, check the following:

- Make sure that the Wang SC power cord has not been accidentally unplugged.
- Verify that the AC Power switch (or circuit breaker) has not been inadvertently turned off.
- Unplug the Wang SC power cord from the wall outlet and remove the fuse located next to the power cord on the back of the unit. To do this, simply turn it counterclockwise and slide it out of the holder. Because these fuses are of the ceramic variety, it is not possible to tell if they are blown simply by viewing them. Try replacing the fuse with one of the same type (MDA) and rating. (See Table 1 to determine the appropriate fuse size).
- If the Wang SC Conditioner still does not appear to be functioning properly, call your nearest authorized Wang service center.

